Real-Time Control Systems

PHASE III IMPACT

- 763 units sold to date, generating $1,676,344 in sales.
- $750,000 in Government/DoD Research and Development Funds.
- $1,247,000 in Private Research and Development Funds.

Control systems for autonomous hardware, such as those in unmanned air and ground vehicles, are much easier to build with tools that duplicate exactly what is happening in the computer and allow changes in real-time while the system is running. Advanced Technology Research Corporation's (ATR) control system environment and diagnostic toolkit support the Real-time Control System (RCS), designated as the preferred controller methodology for Future Combat Systems autonomous vehicles. ATR's toolkit provides unusually powerful access into complex operations, providing multiple viewpoints to disclose prevailing conditions in plain terms, and in 3-D graphic displays. This environment increases a developer's effectiveness, allowing smaller development teams and faster turnaround of reliable automated systems. Results have been applied to a wide diversity of systems, including unmanned aircraft, unmanned vehicles, robot welders, machinery prognostics, factory automation, postal material handling, multi-axis machine tools, plasma arc cutters, water jet cutters, laser welders, and factory cell control. RCS diagnostic tools and engineering methods accelerate and clarify control software development throughout its lifecycle.